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| 10/753,847 | 01/08/2004 | Danielle Lagard | IFF-75 | 6031 |

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| EXAMINER | |
|---|---|
| RAMILLANO, LORE JANET | |
| **ART UNIT** | **PAPER NUMBER** |
| 1797 | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/753,847 | LAGARD ET AL. | |
| | Examiner | Art Unit | |
| | Lore Ramillano | 1743 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *1/8/04*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/8/04* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/4/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Status of Claims*

1. Claims 1-20 are pending and under examination.

### *Information Disclosure Statement*

2. The information disclosure statement (IDS) submitted on 6/4/04 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Objections*

3. Claim 2 is objected to because of the following informalities: applicant should recite the limitations being referred to in subsection (i) of claim 2 instead of reciting "the apparatus defined according to claim 1." Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 and 2 recites the limitation "said hollow enclosure means". There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant

for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1, 3, and 4** are rejected under 35 U.S.C. 102(b) as being anticipated by Ledig (US 6495375).

Ledig discloses an apparatus for quantitatively and qualitatively enabling the analysis of a volatile substance encapsulated in a plurality of rupturable microcapsules each of which (a) has a rupturable polymeric wall; (b) has an outside diameter in the range of from about 0.01 microns to about 1000 microns and has a wall thickness in the range of from about 0.01 microns to about 100 microns; (c) contains from about 50% to about 97% by weight of volatile substance or solution of volatile substance; and (d) is releasably adhered to the surface of a semi-solid substrate section, comprising: (i) a horizontally-situated reciprocatingly-movable horizontal substantially solid substantially planar surface located in the 'X-Y' plane associated with a driving means therefor for effecting a reciprocating motion of said substantially solid substantially planar surface at a controllable frequency $\phi$ or set of frequencies, $\phi_1$, $\phi_2$, $\phi_3$, $\phi_n$, (wherein n is an integer in the range of from 1 to about 20) for a determined period of time, $\theta$; (ii) substantially removably supported on said substantially solid substantially planar surface, said hollow enclosure means having a void space surrounded by a gas-impermeable horizontally-disposed base, a gas-impermeable horizontally-disposed lid and a gas-impermeable substantially cylindrical wall extending upwardly from and circumventing said base and extending downwardly from and circumventing said lid, said lid and/or said cylindrical wall having at least one exit port means and an entry port means therethrough, said hollow enclosure means being maintained in a stable, rigid, upright configuration

during operation of said apparatus and being adapted to stably contain (I) a plurality of mobile solid-state spheres and/or ellipsoids each of which has a weight of from about 1 gm to about 100 gm, a density of from about 2 gm/cc to about 10 gm/cc, an average diameter of from about 0.5 cm to about 3.0 cm. and a surface hardness Knoop value in the range of from about 160 to about 220 and (II) inter-leaved between layers of said plurality of spheres and/or ellipsoids, semi-solid substrate sections having laminar surfaces, each of which has adhered thereto a plurality of said volatile substance-containing rupturable microcapsules each of which has a surface hardness Knoop value in the range of from about 10 to about 20 and a microcapsule wall tensile strength several orders of magnitude less than the tensile strength of each of said solid-state spheres and/or ellipsoids, with the range of mass ratios of said plurality of spheres and/or ellipsoids, semi-solid substrate sections being in the range of from about 20:1 to about 100:1; (iii) analyte collection means located downstream from said hollow enclosure means and communicating with said exit port means thereof, consisting essentially of tube trapping means whereby analyte mixture components emitted from said hollow enclosure means during gas flow therethrough and simultaneous operation of said horizontally-situated oscillatably-movable horizontal substantially solid substantially planar surface are entrapped in said tube trapping means; and (iv) upstream from said hollow enclosure means or downstream from said analyte collection means, gas flow-effecting means for effecting the flow of gas sequentially (I) from a location upstream from said first entry port means; (II) through said first entry port means; (III) into said hollow enclosure means in a direction substantially perpendicular to the plane of said base; (IV) past each of said plurality of spheres and/or ellipsoids; (V) through said

exit port means of said hollow enclosure means and (VI) into and through said analyte collection means (i.e. figs. 1A-D, col. 2, line 1 to col. 5, line 19).

Ledig further discloses the following: the gas flow effecting means is upstream from said hollow enclosure means by means of pressurizing the carrier gas upstream from said hollow enclosure means; and the gas flow effecting means is downstream from said analyte collection means using vacuum pump means located downstream from said analyte collection means (i.e. figs. 1A-D, col. 2, line 1 to col. 5, line 19).

7. **Claims 1, 3, and 4** are rejected under 35 U.S.C. 102(b) as being anticipated by Elmore et al. ("Elmore," *Comparison of Dynamic Headspace Concentration on Tenax with Solid Phase Microextraction for the Analysis of Aroma Volatiles*, 1997).

Elmore discloses an apparatus for quantitatively and qualitatively enabling the analysis of a volatile substance encapsulated in a plurality of rupturable microcapsules each of which (a) has a rupturable polymeric wall; (b) has an outside diameter in the range of from about 0.01 microns to about 1000 microns and has a wall thickness in the range of from about 0.01 microns to about 100 microns; (c) contains from about 50% to about 97% by weight of volatile substance or solution of volatile substance; and (d) is releasably adhered to the surface of a semi-solid substrate section, comprising: (i) a horizontally-situated reciprocatingly-movable horizontal substantially solid substantially planar surface located in the 'X-Y' plane associated with a driving means therefor for effecting a reciprocating motion of said substantially solid substantially planar surface at a controllable frequency $\phi$ or set of frequencies, $\phi_1$, $\phi_2$, $\phi_3$, $\phi_n$, (wherein n is an integer in the range of from 1 to about 20) for a determined period of time, $\theta$; (ii) substantially removably supported on said substantially solid substantially planar surface,

said hollow enclosure means having a void space surrounded by a gas-impermeable horizontally-disposed base, a gas-impermeable horizontally-disposed lid and a gas-impermeable substantially cylindrical wall extending upwardly from and circumventing said base and extending downwardly from and circumventing said lid, said lid and/or said cylindrical wall having at least one exit port means and an entry port means therethrough, said hollow enclosure means being maintained in a stable, rigid, upright configuration during operation of said apparatus and being adapted to stably contain (I) a plurality of mobile solid-state spheres and/or ellipsoids each of which has a weight of from about 1 gm to about 100 gm, a density of from about 2 gm/cc to about 10 gm/cc, an average diameter of from about 0.5 cm to about 3.0 cm. and a surface hardness Knoop value in the range of from about 160 to about 220 and (II) inter-leaved between layers of said plurality of spheres and/or ellipsoids, semi-solid substrate sections having laminar surfaces, each of which has adhered thereto a plurality of said volatile substance-containing rupturable microcapsules each of which has a surface hardness Knoop value in the range of from about 10 to about 20 and a microcapsule wall tensile strength several orders of magnitude less than the tensile strength of each of said solid-state spheres and/or ellipsoids, with the range of mass ratios of said plurality of spheres and/or ellipsoids, semi-solid substrate sections being in the range of from about 20:1 to about 100:1; (iii) analyte collection means located downstream from said hollow enclosure means and communicating with said exit port means thereof, consisting essentially of tube trapping means whereby analyte mixture components emitted from said hollow enclosure means during gas flow therethrough and simultaneous operation of said horizontally-situated oscillatably-movable horizontal substantially solid substantially

planar surface are entrapped in said tube trapping means; and (iv) upstream from said hollow enclosure means or downstream from said analyte collection means, gas flow-effecting means for effecting the flow of gas sequentially (I) from a location upstream from said first entry port means; (II) through said first entry port means; (III) into said hollow enclosure means in a direction substantially perpendicular to the plane of said base; (IV) past each of said plurality of spheres and/or ellipsoids; (V) through said exit port means of said hollow enclosure means and (VI) into and through said analyte collection means (i.e. p. 2638, col. 2 to p. 2639, col. 1).

Elmore further discloses the following: the gas flow effecting means is upstream from said hollow enclosure means by means of pressurizing the carrier gas upstream from said hollow enclosure means; and the gas flow effecting means is downstream from said analyte collection means using vacuum pump means located downstream from said analyte collection means (i.e. p. 2638, col. 2 to p. 2639, col. 1).

8. **Claims 1 and 3-4** are rejected under 35 U.S.C. 102(e) as being anticipated by Brain et al. ("Brain," US Pub. No. 2004/0072720).

Brain discloses an apparatus for quantitatively and qualitatively enabling the analysis of a volatile substance encapsulated in a plurality of rupturable microcapsules each of which (a) has a rupturable polymeric wall; (b) has an outside diameter in the range of from about 0.01 microns to about 1000 microns and has a wall thickness in the range of from about 0.01 microns to about 100 microns; (c) contains from about 50% to about 97% by weight of volatile substance or solution of volatile substance; and (d) is releasably adhered to the surface of a semi-solid substrate section, comprising: (i) a horizontally-situated reciprocatingly-movable horizontal substantially solid

substantially planar surface located in the 'X-Y' plane associated with a driving means therefor for effecting a reciprocating motion of said substantially solid substantially planar surface at a controllable frequency $\phi$ or set of frequencies, $\phi_1$, $\phi_2$, $\phi_3$, $\phi_n$, (wherein n is an integer in the range of from 1 to about 20) for a determined period of time, $\theta$; (ii) substantially removably supported on said substantially solid substantially planar surface, said hollow enclosure means having a void space surrounded by a gas-impermeable horizontally-disposed base, a gas-impermeable horizontally-disposed lid and a gas-impermeable substantially cylindrical wall extending upwardly from and circumventing said base and extending downwardly from and circumventing said lid, said lid and/or said cylindrical wall having at least one exit port means and an entry port means therethrough, said hollow enclosure means being maintained in a stable, rigid, upright configuration during operation of said apparatus and being adapted to stably contain (I) a plurality of mobile solid-state spheres and/or ellipsoids each of which has a weight of from about 1 gm to about 100 gm, a density of from about 2 gm/cc to about 10 gm/cc, an average diameter of from about 0.5 cm to about 3.0 cm. and a surface hardness Knoop value in the range of from about 160 to about 220 and (II) inter-leaved between layers of said plurality of spheres and/or ellipsoids, semi-solid substrate sections having laminar surfaces, each of which has adhered thereto a plurality of said volatile substance-containing rupturable microcapsules each of which has a surface hardness Knoop value in the range of from about 10 to about 20 and a microcapsule wall tensile strength several orders of magnitude less than the tensile strength of each of said solid-state spheres and/or ellipsoids, with the range of mass ratios of said plurality of spheres and/or ellipsoids, semi-solid substrate sections being in the range of from about 20:1 to about

100:1; (iii) analyte collection means located downstream from said hollow enclosure means and communicating with said exit port means thereof, consisting essentially of tube trapping means whereby analyte mixture components emitted from said hollow enclosure means during gas flow therethrough and simultaneous operation of said horizontally-situated oscillatably-movable horizontal substantially solid substantially planar surface are entrapped in said tube trapping means; and (iv) upstream from said hollow enclosure means or downstream from said analyte collection means, gas flow-effecting means for effecting the flow of gas sequentially (I) from a location upstream from said first entry port means; (II) through said first entry port means; (III) into said hollow enclosure means in a direction substantially perpendicular to the plane of said base; (IV) past each of said plurality of spheres and/or ellipsoids; (V) through said exit port means of said hollow enclosure means and (VI) into and through said analyte collection means (i.e. para. [0109]-[0112]).

Brain further discloses the following: the gas flow effecting means is upstream from said hollow enclosure means by means of pressurizing the carrier gas upstream from said hollow enclosure means; and the gas flow effecting means is downstream from said analyte collection means using vacuum pump means located downstream from said analyte collection means (i.e. para. [0109]-[0112]).

***Claim Rejections - 35 USC § 103***

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. **Claims 2 and 5-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brain in view of Schmidt (US 4973422).

In addition to the disclosure indicated above, Brain discloses the process for carrying out a collection of analyte for the purpose of effecting quantitative and qualitative analysis of a volatile analyte composition encapsulated in a plurality of rupturable microcapsules each of which (a) has a rupturable polymeric wall; (b) has an outside diameter in the range of from about 0.01 microns to about 1000 microns and has a wall thickness in the range of from about 0.01 microns to about 100 microns; (c) contains from about 50% to about 97% by weight of volatile substance or solution of volatile substance; and (d) is releasably adhered to the surface of a semi-solid substrate section, comprising the steps of: (i) providing the apparatus defined according to claim 1; (ii) placing into the void space of said hollow enclosure means (I) layers of a plurality of

mobile solid-state spheres and/or ellipsoids each of which has a weight of from about 1 gm to about 100 gm, a density of from about 2 gm/cc to about 10 gm/cc, an average diameter of from about 0.5 cm to about 3.0 cm. and a surface hardness Knoop value of from about 160 to about 220 and (II) inter-leaved between layers of said plurality of spheres and/or ellipsoids, semi-solid substrate sections having laminar surfaces, each of which has adhered thereto a plurality of said and a microcapsule wall tensile strength several orders of magnitude less than the tensile strength of each of said solid-state spheres and/or ellipsoids, with the range of mass ratios of said plurality of spheres and/or ellipsoids; semi-solid substrate sections being in the range of from about 20:1 to about 100:1; (iii) engaging said driving means for effecting a reciprocating motion of said substantially solid substantially planar surface at a controllable frequency $\phi$ or set of frequencies, $\phi_1$, $\phi_2$, $\phi_3$, $\phi_n$ (wherein n is an integer in the range of from 1 to about 20) for a determined period of time, $\theta$; (iv) simultaneously with the engagement of said driving means for effecting an oscillating motion of said substantially solid substantially planar surface, upstream from said hollow enclosure means, or downstream from said analyte collection means, effecting the flow of carrier gas sequentially (I) from a location upstream from said first entry port means; (II) through said first entry port means; (III) into said hollow enclosure means in a direction substantially perpendicular to the plane of said base; (IV) past each of said plurality of spheres and/or ellipsoids; (V) through said exit port means of said hollow enclosure means and (VI) into and through said analyte collection means whereby volatile substance components emitted from the microcapsules ruptured as a result of the spheres and/or ellipsoids abrading against them during

operation of the apparatus are entrapped in said analyte collection means. (i.e. para. [0109]-[0112]).

Brain does not specifically disclose microcapsules having a surface hardness value from about 10 to about 20.

Schmidt teaches perfume particles having an average size of less than about 350 microns which comprise from about 5% to about 70% of a perfume dispersed in from about 30% to about 95% of a water-insoluble polymeric carrier material having a molecular weight of from about 100 to about 30,000, a melting point of from about 37.degree. C. to about 190.degree. C., and a hardness value of from about 0.1 to about 15.0. (i.e. col. 3, lines 31-39).

It would have been obvious to a person of ordinary skill in the art to modify Brain's microcapsules by making a microcapsules with a surface hardness from about 10 to about 20 because it would be desirable to create a microcapsule with a particular rigidity level to ensure that the volatile substance inside the microcapsules is not prematurely released from the microcapsule.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lore Ramillano whose telephone number is (571) 272-7420. The examiner can normally be reached on Mon. to Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lore Ramillano
Examiner
Art Unit 1797

LYLE A. ALEXANDER
PRIMARY EXAMINER